

The State of New Hampshire
Department of Environmental Services



Michael P. Nolin
Commissioner

Town of Durham
100 Stone Quarry Drive
Durham, NH 03824

Re: Wiswall Dam
Dam #071.04

ADMINISTRATIVE ORDER

No. WD 05-01

January 28, 2005

A. INTRODUCTION

This Administrative Order is issued by the Department of Environmental Services, Water Division to the Town of Durham, pursuant to RSA 482:12 and RSA 482:87. This Administrative Order is effective upon issuance.

B. PARTIES

1. The Department of Environmental Services, Water Division ("DES"), is a duly constituted administrative agency of the State of New Hampshire, having its principal office at 29 Hazen Drive, Concord, NH 03302-0095.
2. The Town of Durham ("Owner") is a duly-constituted municipality of the State of New Hampshire having a mailing address of 100 Stone Quarry Drive, Durham, NH 03824

C. STATEMENTS OF FACTS AND LAW

1. Pursuant to RSA 482, DES regulates the construction and maintenance of dams so as to meet the stated statutory objectives, including the regulation of water levels, the lessening of flood damage, and the enhancement of public safety. Pursuant to RSA 482:87, the Commissioner of DES has adopted NH Admin. Rules Env-Wr 100-700 to implement this program.
2. According to DES records, the Town of Durham owns the dam in Durham, NH known as the Wiswall Dam, further identified as Dam #71.04 ("Dam"). The Dam is located on the Lamprey River approximately 200 feet downstream of Wiswall Road, a town road.
3. RSA 482:12 requires DES to periodically inspect all dams in the state which may pose a menace to public safety, and to take action to ensure that the dam is repaired if the inspection indicates that the public safety so requires.
4. RSA 482:2, V defines a "dam in disrepair" as a dam which is a menace to public safety and is incapable of safely impounding flood waters to its crest, or is incapable of maintaining a reasonably constant level of waters impounded or which does not contain adequate gates and sluiceways to provide for the holding or controlled discharge of waters impounded.

5. RSA 482:11-a requires the owner of a dam to maintain and repair the dam so that it does not become a dam in disrepair.
6. Env-Wr 101.21 defines "menace to public safety" as any dam whose failure would threaten life or property. Property, when used in this context, means buildings, structures or other real estate.
7. Env-Wr 101.05 defines "Class B Structure" as a dam with a significant hazard potential, the failure of which would result in possible loss of life and significant economic loss.
8. The Dam has been classified as a Class B Structure by DES because there is predicted flooding to residences and two roads downstream. There exists a possibility for loss of life in the event of a breach of the Dam.
9. On October 10, 1995 a letter of deficiency (LOD) was issued to the Owner that required maintenance of the Dam. This LOD remains open with only partial compliance obtained. Deficiencies identified in the LOD include:
 - a. The concrete surface and the center pier between the two gate outlets are deteriorated.
 - b. There are voids along the base of the spillway between the concrete and ledge foundation.
 - c. The concrete face of the spillway is deteriorated.
 - d. There were trees and brush around the left abutment wall.
10. On October 23, 1997, DES conducted a follow-up inspection and found only partial compliance with the 10/10/95 LOD. Trees and brush had been removed.
11. On March 5, 1998 the Owner sent DES a letter stating that the gate repairs would be made in 1998 and the concrete repairs would be addressed during 1999.
12. On March 20, 1998, DES sent the Owner a letter requesting a schedule for concrete repairs to the Dam.
13. On September 2, 1998 the Owner informed DES that their budget for 1998 did not include the funds required to retain an engineering consultant to determine the extent of the required repairs to the toe of the spillway but stated that the funds will be included in the Owner's 1999 budget proposal.
14. On November 9, 1999, DES conducted a scheduled dam safety inspection. It was found that three of the deficiencies from the 10/10/95 LOD had not been addressed. Additional deficiencies were noted that included lack of an operation and maintenance plan (O&M), the need to update and test the emergency action plan (EAP), and inadequate discharge capacity.
15. On April 18, 2000 DES issued a second letter of deficiency to the Owner.
16. On August 9, 2000, the Owner hired a private engineering consultant to perform a detailed inspection of the Dam.

17. On October 3, 2000, Goldberg Zoino & Associates (GZA) issued a dam safety report with recommendations to the Owner to correct the deficiencies noted in the DES LOD dated 4/18/2000. In addition, GZA recommended that the Owner perform an underwater survey to inspect the upstream face of the Dam, carry out a stability analysis, perform a review of the discharge capacity and conduct an investigation of the high toe drain flows.
18. In May 2001, the Owner agreed to participate in a feasibility study, to be conducted by the US Army Corps of Engineers (ACOE), to study the option of removing the Dam to obtain fish passage.
19. On October 3, 2003, DES conducted a scheduled dam safety inspection. No action had been taken on the deficiencies noted in the 4/18/2000 LOD.
20. The Dam is in disrepair as defined in RSA 482:2 V.
21. The Dam, in the current state of disrepair, is a menace to public safety, as a failure of the Dam would result in possible loss of life, significant economic loss and damage to a town road.

D. DETERMINATION OF VIOLATIONS

1. The Owner has violated RSA 482:11-a by failing to maintain the Dam to prevent it from becoming a "dam in disrepair".

E. ORDER

Based on the above findings, DES hereby orders the Owner as follows:

By April 1, 2005:

1. Update the emergency action plan and perform the annual testing of the notification flowchart.
2. Remove the minor brush along the downstream face of the left abutment wall within 20 feet of the dam.
3. Demonstrate to DES that an engineering firm has been retained to perform the following tasks or assessments:
 - a. Perform a stability assessment of the Dam to document its ability to resist sliding, overturning and seismic forces under both normal and unusual loading conditions.
 - b. Demonstrate that the Dam is stable to withstand the predicted overtopping from a 100-year storm event or propose modifications to the Dam to increase the discharge capacity.
 - c. Perform a detailed inspection of the Dam under fully dewatered conditions.
 - d. Assess the condition of both low level gates and recommend either repair or replacement. This assessment should include the gate panels, slides, seats, operating mechanisms and operating mechanism/dam structure contact connection.
 - e. Investigate the origin and condition of both the 4 in. diameter and 10 in. diameter drains, located at the right abutment and center section of the Dam, respectively.

By December 31, 2005

4. Repair the right downstream earthen embankment that was eroded adjacent to the concrete abutment wall.
5. Replace any missing stones along the right downstream training wall and stabilize this wall as necessary.
6. Perform concrete repairs in the following locations:
 - a. At the downstream face of the spillway where voids 3 –4" deep were observed.
 - b. At the downstream toe of the spillway where voids have been noted in the past.
 - c. At the downstream concrete facing in the area of the low level gates, including the contact area with the overflow spillway that was cracked and spalled.
7. Submit a copy of the engineering report completed as part of item E.3.

By December 31, 2006

8. Implement recommendations that result from the completion of item E.3, above, as approved by DES.

Send correspondence, data, reports, and other submissions made in connection with this Administrative Order, **other than appeals**, to DES as follows:

Grace Levergood, P.E., Dam Safety Engineer, Dam Bureau
DES Water Division
P.O. Box 95
29 Hazen Drive
Concord, NH 03302-0095
Tel: (603) 271-3406
Fax: (603) 271-7894
E-mail: glevergood@des.state.nh.us

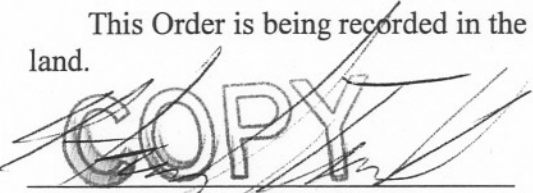
F. APPEAL

Any person aggrieved by this Order may appeal the Order to the Water Council by filing an appeal that meets the requirements specified in Env-Wc 200 within 30 days of the date of this Order. Copies of the rule are available from the DES Public Information Center at (603) 271-2975 or at <http://www.des.state.nh.us/desadmin.htm>. Appealing the Order does not automatically relieve the Town of Durham of the obligation to comply with the Order.

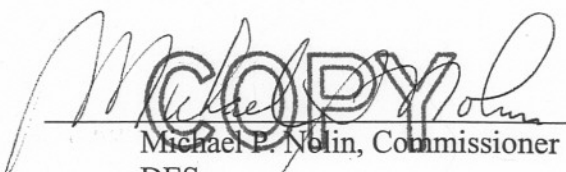
G. OTHER PROVISIONS

Please note that RSA 482:89 provides for administrative fines and criminal penalties for the violations noted in this Order. DES will continue to monitor the Town of Durham's compliance with applicable requirements and will take appropriate action if additional violations are discovered.

This Order is being recorded in the Strafford County Registry of Deeds so as to run with the land.



Harry T. Stewart, P.E., Director
Water Division



Michael P. Nolin, Commissioner
DES

Certified Mail/RRR: 7000 1670 0000 0588 5878

cc: Gretchen R. Hamel, DES Legal Unit Administrator ✓
Public Information Officer, DES PIP Office
NH AGO